

RELATIVE HUMIDITY SENSOR WITH COMPENSATION FOR
CHANGES IN PRESSURE AND GAS COMPOSITION

ABSTRACT OF THE INVENTION

A sensor system for sensing the relative humidity level of gas stream in a fuel cell includes a humidity sensor that senses the relative humidity of a gas stream and generates a relative humidity signal. A pressure sensor senses the pressure of the gas stream and generates a pressure signal. A temperature sensor senses the temperature of the gas stream and generates a temperature signal. A compensator is connected to the humidity sensor, the temperature sensor and/or the pressure sensor. The compensator generates a compensated relative humidity signal based on the relative humidity signal, the temperature signal and/or the pressure signal. Additional inputs to the compensator can include one or more gas composition sensors that determine the concentration of one or more gases.